ROHM AND HAAS ELECTRONIC MATERIALS

ROHM AND HAAS ELECTRONIC MATERIALS, LLC
455 FOREST STREET, MARLBOROUGH, MA 01752 USA
TELEPHONE (508) 481-7950 FAX (508) 485-9113

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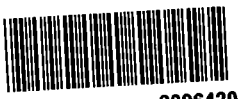

ROHM AND HAAS

April 30, 2007

Ms. Joan Martin-Banks (3HS62)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Response to Required Submission of Information
Chem Fab Corporation Site, Doylestown, Bucks County, Pennsylvania

Dear Ms. Martin-Banks:

The following is Rohm and Haas Electronic Materials LLC's ("Rohm and Haas Electronic Materials" or "Respondent") Response to your office's request for information regarding the above site, which was addressed to "Morton International, Inc." and was received on March 7, 2007:

General Response: Respondent objects to these Questions as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows:

Respondent, to the best of its knowledge, did not dispose of waste at the Chem Fab Corporation Site ("the Site"). Respondent's knowledge is based on the document provided by EPA (attached at ROHEM-0001), interviews with employees likely to have knowledge and review of relevant corporate records. While Respondent, to the best of its knowledge, Dynachem (California) did not dispose of waste at the Site, Respondent has found evidence that demonstrates that it very likely sold products to Chem Fab. This evidence is discussed below.

In connection to this Information Request, EPA sent to Rohm and Haas Company a document which identifies the "Dynachem Division" of Morton International Inc. The document lists the phone number "714-730-4200." This number was Dynachem's main office number in California. The document also lists four products which were part of Dynachem's product line.

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Dynachem was owned by Thiokol Corporation at the time of a 1982 merger between Morton and Thiokol Corporation. Dynachem remained a wholly owned subsidiary of Morton-Thiokol, Inc. until it was merged into Morton-Thiokol, Inc., in 1985. It then became the Dynachem Division in Morton Electronic Materials, a subsidiary of Morton International, Inc. Morton International, Inc. was acquired by Rohm and Haas Company in 1999. Morton Electronic Materials was eventually merged into the Rohm and Haas Electronic Materials subsidiary of Rohm and Haas Company.

Rohm and Haas Company is a global specialty materials company with operation at over 133 sites in 27 countries and over 15,000 employees. Based on the information provided by EPA as to the alleged connection to this Site, Rohm and Haas Company therefore limited its search for relevant information to Dynachem and its successors in Rohm and Haas Electronic Materials.

After a review of applicable records and interviews with employees likely to have knowledge of relevant transactions, Respondent was able to identify two transactions or series of transactions with the Site:

1. A set of transactions shown on a Contract Price Report (attached at ROHEM-0002). This Contract Price Report shows three contracted prices of Laminar to Chem-Fab Corporation. It is a spread sheet that was run off the Morton / Dynachem server, dated 10/01/99. The input stated "Chem-Fab Corporation - Product "Laminar LM 10" with a price of $0.370 issued on 08/09/1993, an increase to $0.393 on 12/02/1991 and the same price again issued on 08/03/1995. While this Contract Price Report does not show that Respondent actually sold Chem-Fab the products, Respondent believes that these entries indicate a strong likelihood that Respondent did sell these products to Chem-Fab.

2. Information on the second transaction was recovered from a legacy database. The information indicates that Respondent shipped "B00323 Alkastrip AQ-1 - Qty 1" on 09/09/1992. Alkastrip is a product. Please see ROHEM-0010 through ROHEM-0016 for its MSDS.

1. What is the current nature of your business or activity? What was the nature of your business or activity during the period 1965 to 1999? Please describe in detail if the nature of your business or activity changed from the period 1965 to 1999. Please provide a detailed explanation of these changes.

Response: Respondent objects to this Question as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows: Dynachem made imaging materials for printed circuit boards. The imaging materials included dry film photo resists and associated developer and stripper chemistries. Please see the General Response.

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2. EPA has obtained information during the course of its investigation indicating that you may have produced waste, which was disposed of at the Site, and/or disposed of waste at the Site referenced in this letter. Please provide the following information regarding all wastes and by products produced by you during the period 1965 to 1999:

a. The nature of each "waste" (as the term "waste" is defined in paragraph 6 of the definitions attached hereto) used including its chemical content, characteristics and physical state (i.e., liquid, solid, gas, or in the form of contaminated rags, cups, containers, scrap metal). Provide chemical analyses and Material Safety Data Sheets ("MSDS"). If these analyses are not available for the period 1965 through 1999, submit analyses for the time period closest to these dates and describe, in detail, any changes in the process (es) in which these wastes were produced that would affect the chemical analyses;

Response: Please refer to the General Response above. To the best of its knowledge, Respondent did not dispose of waste at the Site. The document which the EPA sent to Rohm and Haas Company (ROHMEM-0001) identifies 4 products:

1. Laminar A Stripper Concentrate
2. Laminar Developer Concentrate KB1-B
3. Alka Strip 99A
4. Laminar Developer Concentrate KB-1-A

All four are clearly products, not wastes. The MSDSs for Laminar Developer Concentrate KB1-B, and Alka Strip 99A, Laminar Developer Concentrate KB-1-A are provided attached as ROHEM-0003 thru ROHEM-0029.

At this time, Respondent is unable to locate an MSDS for Laminar A Stripper Concentrate. Laminar A Stripper Concentrate was a straight liquid Sodium Hydroxide stripper. Respondent will supplement this Response with further information and materials if discovered.

b. The annual quantity of each "waste" used or generated;

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

c. The process (es) in which each "waste" was used or the process (es) that generated each;

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

d. The types of containers used to treat, store or dispose of each "waste"; and

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

e. The method of treatment and/or disposal of each "waste."

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

3. Provide the names, titles, areas of responsibility, addresses and telephone numbers of all persons, including your own, who during the period 1965 to 1999, may have:

a. Disposed of or treated "waste" at the Site;

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

b. Arranged for the disposal or treatment of "waste" at the Site; or

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

c. Arranged for the transportation of "waste" to the Site (either directly or through transshipment points) for disposal or treatment.

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

4. Describe the methods used by you to dispose of and/or treat "waste" during the period 1965 to 1999.

Response: Respondent objects to this Question as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

5. If your response to Question 4 includes the contracting of a hauler or transporter to. transport and/or dispose of wastes, explain the arrangements for those transactions and provide documentation that confirms the nature of those transactions.

Response: N/A

6. Did you make arrangements with any of the following companies or individuals to transport and/or dispose of wastes? Manfred De Rewal, Echo Corporation, Revere Chemical Company, Revere Chemical Transport, De Rewal Chemical Company, Inc.,

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Boarhead Corporation, East Falls Corporation, Advanced Environmental Technology Corporation ("AETC"), the Envirotech Company, Environmental Chemical Control, Inc., Jonas Waste Removal, Marvin Jonas, Inc., Marvin Jonas, Simon Wrecking, Simon Resources Inc., Sam Simon, Chern Fab Corporation, Hans Richard Becker, Gulbrandsen Co., Chemical Leaman Tank Lines Inc., Coastal Tank Lines Inc., Macs Associates, and Matlack Transportation Co. .

Response: Respondent objects to this Question as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows: To the best of its knowledge, Respondent did not dispose of waste at the Site and did not make arrangements with any of the listed parties to transport or dispose of waste at the Site.

If so, identify:

a. The persons with whom you, or such other persons, made such arrangements;
Response: N/A

b. Every date on which such arrangements took place;

Response: N/A

c. For each transaction, the nature and quantity of the "waste" including the chemical content, characteristics, physical state (i.e., liquid, solid), 'and the process for which the substance was used or the process that generated the substance;

Response: N/A

d. Precise locations at which each "waste" was disposed or treated;

Response: N/A

e. The persons who selected the Site as the place at which "waste" was disposed or treated;

Response: N/A

f. The final disposition of each of the "wastes" involved in such transactions; and

Response: N/A

g. The names of employees, officers, owners and agents for each transporter.

Response: N/A

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7. For each and every instance in which you arranged for disposal or treatment of "waste" at the Site, identify:

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. For information on products that may have been brought to the Site, please see the General Response and the Response to Question 2 a.

a. The characteristics, physical state (i.e., liquid, solid) and chemical composition of each "waste";

Response: N/A

b. The persons who supplied you with "waste" material disposed or otherwise handled by you;

Response: N/A

c. How such "wastes" were used, treated, transported, disposed or otherwise handled by you;

Response: N/A

d. When and where such "wastes" were used, treated, transported, disposed or otherwise handled by you;

Response: N/A

e. The quantity (number of loads, gallons, drums) of the "wastes" which were used, treated, transported, disposed or otherwise handled by you; and

Response: N/A

f. Any billing information and documents (invoices, trip tickets, manifests) in your possession regarding arrangements made with you to generate, treat, store, transport or dispose of "wastes" at the Site.

Response: N/A

8. Provide the names, titles and areas of responsibility of any persons, including all present and former employees, who may be knowledgeable of your waste disposal practices, whether or not involving disposal at the Site, during the period 1965 to 1999. Include current addresses and dates of birth for former employees.

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Response: Respondent objects to this Question as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

9. Describe any permits or applications and any correspondence between you and any regulatory agencies regarding "wastes" transported to or disposed of at the Site.

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

10. Provide copies of any correspondence between you and any third party regarding "wastes" transported to or disposed of at the Site.

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

11. Provide the identity of, and copies of any documents relating to, any other person who generated, treated, stored, transported or disposed, or who arranged for the treatment, storage, disposal or transportation of such "wastes" to the Site.

Response: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

12. Provide the identities of all predecessors in interest who, during the period 1965 to1999, transported, stored, treated to otherwise disposed of any "wastes" at the Site and describe in detail the nature of your predecessor in interest's business. Describe all changes in ownership from 1965 to the present, including the date of the ownership change and identify the type of change (i.e., asset purchase, corporate merger, consolidation, and name change). Provide a copy of each asset purchase and merger agreement.

Response: Respondent objects to this Question as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows: To the best of its knowledge, Respondent did not dispose of waste at the Site. Please see the General Response and the Response to Question 2 a.

13. Provide the name, title, address, and telephone number of the person answering these questions on behalf of the respondent.

Paul Connor
Director, Global Environmental Health and Safety
Rohm and Haas Electronic Materials
455 Forest Street

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Marlborough, MA 01752-3001
Phone: (508)229-7051

14. For each question, provide the name, title, area of responsibility, current address and telephone number of all persons consulted in the preparation of the answers.

Response: Respondent objects to this Question as overly broad and unduly burdensome. Subject to and without waiving this objection, Respondent states as follows: A variety of current employees were consulted in the preparation of these Responses. The information provided in these Response facilities was gathered under the direction of the following individual, who consulted employees with knowledge as appropriate:

Paul Connor
Director, Global Environmental Health and Safety
Rohm and Haas Electronic Materials
455 Forest Street
Marlborough, MA 01752-3001
Phone: (508)229-7051

15. If you have reason to believe that there may be persons able to provide more detailed or complete responses to any question contained herein or who may be able to provide additional responsive documents, provide the names, titles, areas of responsibility, current addresses, and telephone numbers of such persons and describe the additional information or documents they may have.

Response: The Respondent is unaware of any such persons.

16. For each and every question contained herein, if information or documents responsive to this Information Request are not in your possession, custody or control, then provide the names, titles, areas of responsibility, current addresses and telephone numbers of the persons from whom such information or documents may be obtained.

Response: The Respondent is unaware of any such information or persons.

17. If you have any information about other parties who may have information which may assist the Agency in its investigation of the Site or who may be responsible for the generation of, transportation to or release of contamination at the Site, please provide such information. The information you provide in response to this request should include each party's name, address, type of business and the reasons why you believe the party may have contributed to the contamination at the Site or may have information regarding the Site.

Response: The Respondent is unaware of any such information or parties.

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Sincerely,

Paul Connor
Director, Global Environmental Health
and Safety
Rohm and Haas Electronic Materials

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1230 Lunch break

1300 Site operations continue.

Afternoon operations today

- drum sampling in Yard Area - USL drums
- moving drums from trailers thru [illegible]
- Site Hot/Clean Zone delineation
- Safety precautions
  - sampling is mostly Acids
  - pinch points/back strain moving drums
  - Smoking/eating outside only.
  - Forklift operations.

Decon being relocated to second drum staging area for sampling of remaining drums.

→ 1330 ERCS RM contacts Morton International Inc. (Morton Electronic Materials), Dynachem Division, 714-730-4200, to request MSDS's:

Qty (5 gal.)	Product
2	laminar 4 stripper [400k] (concentrate)
2	laminar developer concentrate KB1-B
2	alka strip 99A
2	laminar developer concentrate KB-1-A

1400 afternoon drum sampling operations in the yard continue. TAT to conduct periodic perimeter air monitoring.

1430 perimeter air monitoring sweep of drum sampling work area complete. No readings were [illegible] TAT also conducted sweeps sweep - trailers on-site observed.

1435 ERCS personnel in Yard Area - ERCS [illegible] in hot zone Level B ops ongoing of safety protocol

1445 TAT provides [illegible] area for chemist [illegible]

1600 Kelly's security

1645 - 49 Drums [illegible] ERCS overpack. one with large others in poor - 4 Drums o[illegible] area

(14) ~~[illegible]~~ samples

1730 Day ends

[signature]

CONTRACT PRICE REPORT
FOR LAMINAR-IN SQ FT

CUSTM FROM: *ALL REGION FROM: *ALL
TO: TO:

REG	CUSTOMER NUMBER	NAME	PRODUCT CODE	DESCRIPTION	SQ FT PRICE	CONTRACT BEG DATE
4	41208	C P E INC	5038	LAMINAR*5038 15	.245	1999-04-21
4	41208	C P C INC	C520	LAMINAR* MX 20	.295	1999-04-21
4	41208	C P C INC	MX20	LAMINAR* MX 20	.295	1999-04-21
4	41208	C P C INC	E120	LAMINAR*5050 20	.295	1999-04-21
4	41208	C P C INC	E520	LAMINAR*5051	.295	1999-04-21
4	41208	C P C INC	5050	LAMINAR*5050 20	.295	1999-04-21
4	41215	ZECAL INC.	C920	LAMINAR* GA 20	.383	1999-04-21
4	41215	ZECAL INC.	GA20	LAMINAR* GA 2.0	.383	1999-04-21
4	41225	C S DRAPER LABS	AX15	LAMINAR* AX 1.5	.513	1999-04-21
4	41235	CAPITOL CIRCUITS	C913	LAMINAR* GA 13	.303	1999-04-21
4	41235	CAPITOL CIRCUITS	GA13	LAMINAR* GA13	.303	1999-04-21
4	41235	CAPITOL CIRCUITS	C915	LAMINAR* GA 15	.343	1999-04-21
4	41235	CAPITOL CIRCUITS	GA15	LAMINAR* GA 1.5	.343	1999-04-21
4	41235	CAPITOL CIRCUITS	D240	DYNAMASK* KM 40	1.078	1995-09-01
4	41235	CAPITOL CIRCUITS	KM40	DYNAMASK*KM 40	1.078	1995-09-01
4	41235	CAPITOL CIRCUITS	D230	DYNAMASK* KM 30	.825	1995-09-01
4	41235	CAPITOL CIRCUITS	KM30	DYNAMASK*KM 30	.825	1995-09-01
4	41242	CENTURY NORTH ANDOVER	AE15	LAMINAR* AE 1.5	.255	1995-08-03
4	41242	CENTURY NORTH ANDOVER	C415	LAMINAR* HG 15	.388	1999-04-21
4	41242	CENTURY NORTH ANDOVER	HG15	LAMINAR* HG 1.5	.388	1999-04-21
4	41242	CENTURY NORTH ANDOVER	C420	LAMINAR* HG 20	.423	1999-03-25
4	41242	CENTURY NORTH ANDOVER	E410	LAMINAR* L-T720	.423	1999-03-25
4	41242	CENTURY NORTH ANDOVER	E420	LAMINAR* DR450	.423	1999-03-25
4	41242	CENTURY NORTH ANDOVER	E910	LAMINAR* L-S703	.423	1999-03-25
4	41242	CENTURY NORTH ANDOVER	HG20	LAMINAR* HG 2.0	.423	1999-03-25
4	41242	CENTURY NORTH ANDOVER	ML13	LAMINAR* ML 1.3	.220	1986-12-01
4	41259	C G I CIRCUITS	AX20	LAMINAR* AX 2.0	.373	1999-04-21
4	41259	C G I CIRCUITS	D240	DYNAMASK* KM 40	1.100	1995-09-01
4	41259	C G I CIRCUITS	KM40	DYNAMASK*KM 40	1.100	1995-09-01
4	41259	C G I CIRCUITS	D230	DYNAMASK* KM 30	.770	1995-09-01
4	41259	C G I CIRCUITS	KM30	DYNAMASK*KM 30	.770	1995-09-01
4	41259	C G I CIRCUITS	DM30	LAMINAR* DM 3.0	.768	1995-09-01
4	41259	C G I CIRCUITS	DM40	LAMINAR* DM 4.0	1.073	1995-09-01
4	41259	C G I CIRCUITS	B530	DYNAMASK*5000 30	.678	1999-01-21
4	41259	C G I CIRCUITS	B540	DYNAMASK*5000 40	.968	1999-01-21
4	41259	C G I CIRCUITS	AX15	LAMINAR* AX 1.5	.353	1999-04-21
4	41265	CHEM-FAB CORPORATION	A410	LAMINAR* LM 10	.370	1991-08-09
4	41265	CHEM-FAB CORPORATION	B010	LAMINAR* LM 10	.393	1995-08-03
4	41265	CHEM-FAB CORPORATION	LM10	LAMINAR* LM 10	.393	1991-12-02

ROHEM-0002

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ELECTRONIC MATERIALS
ROHM HAAS

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

ADVANTAGE 2000™ Developer KB-1B

Revision date: 01/01/2004

Supplier

Rohm and Haas Electronic Materials LLC
455 Forest Street
Marlborough, MA 01752 United States of America

For non-emergency information contact: 508-481-7950

Emergency telephone number

Chemtrec	800-424-9300
Rohm and Haas Emergency	215-592-3000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
ethylene glycol n butyl ether	111-76-2	60.0 - <= 100.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Colour	Colorless to white
Odour	mild

Hazard Summary

WARNING!
Combustible liquid and vapor. Causes irritation to eyes, nose, and respiratory tract.
Prolonged, repeated contact, inhalation, ingestion, or absorption through the skin, may cause toxic effects to internal organ systems (liver, kidney, central nervous system).

Potential Health Effects

Primary Routes of Entry: Inhalation, ingestion, eye and skin contact, absorption.

DNHEM-0003

Eyes: May cause pain, transient irritation and superficial corneal effects.

Skin: Material may cause irritation.
Prolonged or repeated exposure may have the following effects:
drowsiness
defatting and drying of the skin which can lead to irritation and dermatitis
central nervous system depression
kidney damage
liver damage

Ingestion: Swallowing may have the following effects:
irritation of mouth, throat and digestive tract
headache
nausea
vomiting
Repeated doses may have the following effects:
central nervous system depression
liver damage
kidney damage

Inhalation: Inhalation may have the following effects:
irritation of nose, throat and respiratory tract
Higher concentrations may have the following effects:
systemic effects similar to those resulting from ingestion

Target Organs: Eye
Respiratory System
nervous system
Liver
Kidney
Skin

Carcinogenicity		
ethylene glycol n butyl ether	IRIS	Possible human carcinogen.
ethylene glycol n butyl ether	ACGIH	Confirmed animal carcinogen with unknown relevance to humans.

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting if person is conscious. Immediate medical attention is required Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

Notes to physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point 68 °C (154 °F)

Suitable extinguishing media: Use water spray, foam, dry chemical or carbon dioxide.
Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting: This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Pressure may build up in closed containers with possible liberation of combustible vapors.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear suitable protective clothing.
Wear respiratory protection.
Eliminate all ignition sources.

Environmental precautions

Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up

Contain spills immediately with inert materials (e.g., sand, earth).
Transfer into suitable containers for recovery or disposal.
Finally flush area with plenty of water.

7. HANDLING AND STORAGE

Handling

Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed.
Further information on storage conditions: Keep away from heat, sparks, flame, and other sources of ignition. Practice good personal hygiene to prevent accidental exposure.

Storage

Storage conditions: Store in original container. Keep away from heat and sources of ignition.
Storage area should be: cool dry well ventilated out of direct sunlight

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
ethylene glycol n butyl ether	Rohm and Haas	TWA	10 ppm
	Rohm and Haas	STEL	30 ppm
	Rohm and Haas	Absorbed via skin	
	ACGIH	TWA	97 mg/m3 20 ppm
	ACGIH	SKIN_DES	
	OSHA_TRANS	PEL	240 mg/m3 50 ppm
	OSHA_TRANS	SKIN_DES	

Eye protection: goggles

Hand protection: Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work wear.

Respiratory protection: Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	liquid
Colour	Colorless to white
Odour	mild
pH	not applicable
Boiling point/range	171 °C (340 °F)
Flash point	68 °C (154 °F)
Vapour pressure	< 1.0 mmHg at 20 °C (68 °F)
Relative vapour density	4.1
Water solubility	completely soluble
Relative density	0.91
Evaporation rate	0.06 n-Butyl acetate
VOC's	885 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions Stable under normal conditions.

Conditions to avoid High temperatures

Materials to avoid Oxidizers

Hazardous decomposition products Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).,

polymerization Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **ethylene glycol n butyl ether**
Acute oral toxicity LD50 guinea pig 1,400 mg/kg
May affect the liver and kidneys and may increase red blood cell fragility.

Component: **ethylene glycol n butyl ether**
Acute oral toxicity LD50 rat 1,250 mg/kg

Component: **ethylene glycol n butyl ether**
Acute inhalation toxicity LC50 rat 4 h 2.175 mg/l

Component: **ethylene glycol n butyl ether**
Acute inhalation toxicity LC50 guinea pig 791 mg/m3

Component: **ethylene glycol n butyl ether**
Acute dermal toxicity LD50 guinea pig > 2,000 mg/kg

Component: **ethylene glycol n butyl ether**
Acute dermal toxicity LD50 rabbit 450 mg/kg

Component: **ethylene glycol n butyl ether**
Toxicity to reproduction
Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.

Component: **ethylene glycol n butyl ether**
Mutagenicity
No mutagenic activity was observed in bacterial cells.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

ethylene glycol n butyl ether

Ecotoxicity effects	
Toxicity to fish	LC50 1,995 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia magna 24 h 1,698 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal
Dispose in accordance with all local, state (provincial), and federal regulations. Incineration is the recommended method of disposal for containers. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

IMO/IMDG

Not regulated (Not dangerous for transport)

15. REGULATORY INFORMATION

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Delayed (chronic) Health Hazard
Fire Hazard
Immediate (acute) Health Hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product contains a chemical which is listed in Section 313 at or above de minimis concentrations.
SARA Title III Components: Glycol Ethers

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D):
U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
This product does not contain any substances subject to Section 12(b) export notification.

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)
This product contains a component or components known to the state of California to cause cancer and/or reproductive harm.
Components: Ethylene oxide 75-21-8

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	2	2	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Version: 2.0
Print Date: 04/02/2007
Layout 307106

ORIGINAL

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product ID: ADVANTAGE 2000(TM) Alkastrip 99A
Generic Description: Stripper Solution
Product Use: PCB Auxiliary

For customer service/technical information, contact:
Electronic Materials
2631 Michelle Drive
Tustin CA 92680
714-730-4200

HAZARD RATINGS		
	HMIS	NFPA
Health	3 *	3
Fire	2	0
Reactivity	0	0
	* = Chronic	

MSDS prepared by:
Toxicology and Regulated Substance Compliance
Allan Rosewarne
100 N. Riverside Plaza
Chicago IL 60606
312-807-2916

ChemTrec Emergency
1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS #	Approximate % (w/w)
Ethylene glycol monobutyl ether	111-76-2	60 - 100
Aliphatic amine	Proprietary	5 - 10
Aliphatic amine	Proprietary	5 - 10
Sulfoxide	Proprietary	1 - 5
Amine	Proprietary	1 - 5
Potassium hydroxide	1310-58-3	1 - 5
Non-hazardous and other ingredients below reportable levels	Proprietary	Balance

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CAUSES SEVERE EYE BURNS. CAUSES SEVERE DIGESTIVE TRACT BURNS. CAUSES SKIN BURNS. HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SEVERE RESPIRATORY TRACT IRRITATION. INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION. INGESTION CAN CAUSE DIZZINESS, FAINTNESS, HEADACHE AND INCOORDINATION. COMBUSTIBLE LIQUID AND VAPOR. MAY BE HARMFUL IF SWALLOWED. INGESTION MAY CAUSE NAUSEA, VOMITING, PAIN, UPSET STOMACH, DIARRHEA. INHALATION MAY CAUSE NAUSEA, VOMITING, UPSET STOMACH. See sections 3, 5, & 6.

PRIMARY ROUTES OF EXPOSURE: Eye. Skin. Inhalation (breathing).

EYE CONTACT: Causes severe burns and permanent eye damage. Can cause burning sensation, tearing, and redness.

SKIN CONTACT: Causes burns. May be harmful if absorbed through the skin. Can cause redness, itching, and burning sensation.

INHALATION (Breathing): Severely irritating to the eyes, nose, and

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respiratory tract. Can cause dizziness, headaches, and incoordination. Nausea, vomiting, and stomach upset can occur. Can cause anesthetic and/or narcotic effects.

INGESTION (Swallowing): Causes severe burns to the mouth, throat, and stomach. May cause nausea, vomiting, pain, and stomach upset (e.g., diarrhea). Can cause dizziness, faintness, headache, and incoordination.

TARGET ORGANS/CHRONIC EFFECTS: Liver. Kidneys. Nervous system. Reproductive system (and reproductive effects). Eyes. Skin. Immune system (e.g, allergic reactions).

CONDITIONS AGGRAVATED BY EXPOSURE: Liver. Kidneys. Nervous system. Blood and/or blood-forming organs. Eyes. Skin. Immune systems and/or specific chemical allergies.

CARCINOGENICITY:

	ACGIH	IARC	NTP	OSHA
Ethylene glycol monobutyl ether	No	No	No	No
Aliphatic amine	No	No	No	No
Aliphatic amine	No	No	No	No
Sulfoxide	No	No	No	No
Amine	No	No	No	No
Potassium hydroxide	No	No	No	No

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush with plenty of water for at least 15 minutes. For large exposures use an emergency shower. Remove contaminated clothing and shoes. Get immediate medical attention. Professionally wash clothing before re-use.

INHALATION (Breathing): Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

INGESTION (Swallowing): Get immediate medical attention. Do NOT induce vomiting unless directed by medical personnel. Rinse mouth with water and give another cupful to drink. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIANS: CORROSIVE MATERIAL! Can cause extensive and deep penetrating tissue damage. There is danger of hemorrhage and perforation if lavage is performed.

5. FIRE FIGHTING METHODS

Flash Point...: 160F 71.1C Method.....: Tagliabue Closed Cup
Explosive Lmts: LEL(%) 1.1 UEL(%) 10.6 Autoignition..: Not Determined

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.). Formaldehyde and/or other aldehydes. Oxides of nitrogen. Oxides of sulfur.

FIRE AND EXPLOSION HAZARDS: High temperatures can cause sealed containers to rupture due to a build up of internal pressure. Cool with water. During a fire, irritating and highly toxic gases may be generated during combustion or

decomposition.

EXTINGUISHING MEDIA: SMALL FIRES: Dry chemical, carbon dioxide, water spray, or foa m. LARGE FIRES: Water spray, fog, or alcohol foam.

FIRE FIGHTING PROCEDURES/EQUIPMENT: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

EVACUATION: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition. Corrosive to the eye and skin. Wear appropriate personal protective equipment, including respiratory protection.

CONTAINMENT: Safely stop discharge. Contain material, as necessary, with a dike or barrier. Stop material from contaminating soil, or from entering sewers or bodies of water.

CLEAN-UP/PERSONAL PROTECTION EQUIPMENT: Appropriate safety measures and protective equipment should be used. Use supplied air respirator or self-contained breathing apparatus in enclosed spaces or if airborne exposure limits can be exceeded. See Section 8.

COLLECTION AND DISPOSAL: Stop discharge, if safe to do so. Use proper protective equipment. Use non-sparking tools and/or explosion-proof equipment. Stop ignition sources. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state and federal regulations.

REPORTING: Spills of this material in excess of a components's RQ must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

Potassium hydroxide	RQ = 1000 LB

7. HANDLING AND STORAGE

Storage Temperature < 100F 37.7C

STORAGE CONDITIONS: Store in cool, dry, well ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed. WARNING: Hot organic chemical vapors or mists can suddenly and without warning combust when mixed with air. Ignition can occur at typical elevated temperature process conditions. Any use in such processes should be evaluated thoroughly to assure safe operating conditions.

TRANSFER: Containers should be supported and grounded before opening, dispensing, mixing, pouring, and emptying. Open with non-sparking tools. If container is warm, open bung slowly to release internal pressure.

PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles faceshield, and gloves. Professionally launder contaminated clothing before re-use.

EMPTY CONTAINER PRECAUTIONS: Attention! This container hazardous when empty. Follow label warnings even after container is emptied since empty containers

may retain product residues. Do not use heat, sparks, open flames, torches, cigarettes on or near empty container. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption or where skin contact can occur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH - TLV

Ethylene glycol monobutyl ether	25 ppm - Skin
Potassium hydroxide	2 ppm - Ceiling

OSHA - PEL

Ethylene glycol monobutyl ether	25 ppm - Skin
Potassium hydroxide	2 ppm - Ceiling

ENGINEERING CONTROLS/VENTILATION: Local exhaust ventilation is recommended when vapors, mists, or dusts can be released in excess of established airborne exposure limits (TLVs or PELs).

EYE PROTECTION: Wear chemical splash goggles and a full-face shield. An eye wash facility should be readily available.

SKIN PROTECTION: Wear rubber boots and apron, protective clothing, and impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for a specific operation.

RESPIRATORY PROTECTION: Avoid breathing vapor and/or mists. Wear NIOSH/MSHA-approved equipment. Determine the appropriate type by consulting the respirator manufacturer. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance....: White	Odor.....: Mild
Physical State: Liquid	Solubility....: Completely soluble
pH.....: > 14	Boiling Point.: 335F 168.3C
Vapor Pressure: 0.6	Vapor Density.: > 1
Evaporation Rt: < 1 (n-Butyl alcohol)	VOC Material..: 605 g/L 5 lbs/gal
Specific Grvty: 0.98	%Non-Vol(w/w).: < 50

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizers. Acids.

11. TOXICITY INFORMATION

COMPONENTS:

Ethylene glycol monobutyl ether:
May affect the liver and kidneys and may increase red blood cell fragility.

Oral LD50	Rat	470 mg/kg
	Mouse	1,230 mg/kg
	Rabbit	300 mg/kg
Dermal LD50	Rabbit	220 mg/kg
	Guinea pig	230 mg/kg
Inhalation LC50	Mouse	700 ppm/7-Hours
	Rat	2,900 mg/M3

Aliphatic amine:

Oral LD50	Rat	5,994 mg/kg
	Mouse	2,520 mg/kg
	Guinea pig	1,580 mg/kg
Dermal LD50	Guinea pig	1,080 mg/kg

Aliphatic amine:

Oral LD50	Rat	4,260 mg/kg
Dermal LD50	Rabbit	1,640 mg/kg

Sulfoxide:
Can cause liver and kidney injury. Studies with laboratory animals have indicated this chemical may affect the reproductive system.

Oral LD50	Rat	14,500 mg/kg
	Mouse	7,920 mg/kg
Dermal LD50	Rat	40,000 mg/kg
Inhalation LC50	Rat	1,600 mg/M3/4-Hours

Amine:

Oral LD50	Rat	5,900 mg/kg

Potassium hydroxide:
Corrosive! Causes eye and skin burns.

Oral LD50	Rat	273 mg/kg

12. ECOLOGICAL INFORMATION

No data are available on this product.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: When a decision is made to discard this material as supplied, it meets RCRA's characteristic definition of corrosivity.

GENERAL STATEMENTS: Federal regulations may apply to empty container. State and/or local regulations may be different.

GENERAL RECOMMENDATIONS: Of the methods of disposal currently available, it is recommended that an alternative be selected according to the following order of preference, based upon environmental acceptability: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

SPECIAL INSTRUCTIONS: Be sure to contact the appropriate government environmental agencies if further guidance is required.

14. TRANSPORT INFORMATION

Weight (lb) Shipping Name 49 CFR IATA IMO

Corrosive liquids, toxic, n.o.s. (alkanolamines, ethylene glycol monobutyl ether)	Y	Y	Y

DOT Label.....: Corrosive, toxic UN/NA Id Num..: UN 2922
DOT Label No..: WD86
Hazard Class..: 8 (IATA/49CFR) 8 (IMO)
Subsid Risk...: 6.1 Packing Group.: III
WHMIS Label...: BD1E
All the information in this section is for non-bulk packagings (119 gallons or less; 882 lbs. or less for solids).

15. REGULATORY INFORMATION

FEDERAL:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III - Section 311/312 - Hazard Categories:
Y- Fire Hazard
N- Sudden Release of Pressure Hazard
N- Reactivity Hazard
Y- Immediate (acute) Health Hazard
Y- Delayed (chronic) Health Hazard

Ozone-Depleting Chemicals - No regulated ingredients.

SARA Section 302 Extremely Hazardous Mat - No regulated ingredients.

SARA Section 313 Toxic Chemicals
Ethylene glycol monobutyl ether
Glycol ethers

TSCA Section 8(d) Data Reporting Rule
Ethylene glycol monobutyl ether

CHEMICAL LISTING - Listed on the following Country's Chemical Inventories:

United States Toxic Substance Control Act
Chemical component(s) in this product are on the section 8(b) Chemical Substance Inventory List (40 CFR 710).

STATE RIGHT-TO-KNOW:

Pennsylvania - New Jersey R-T-K

Ethylene glycol monobutyl ether	111-76-2	60 - 100
Aliphatic amine	Proprietary	5 - 10
Water	7732-18-5	5 - 10
Aliphatic amine	Proprietary	5 - 10
Sulfoxide	Proprietary	1 - 5
Amine	Proprietary	1 - 5
Potassium hydroxide	1310-58-3	1 - 5
Non-hazardous trade secret ingredient(s)	Proprietary	Balance

California - California Proposition 65 - No regulated ingredients.

CONEG - No data available.

CANADA:

This is a "controlled product" under the Canadian Workplace Hazardous Materials Information System (WHMIS).

Class B Division 3	Class D Division 1 Sub-division B
Class D Division 2 Sub-division A	Class D Division 2 Sub-division B

CEPA - NPRI - No regulated ingredients.

16. OTHER INFORMATION

USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

End of Material Safety Data Sheet

ORIGINAL

ELECTRONIC MATERIALS
ROHM HAAS

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

ADVANTAGE 2000™ Developer KB-1A

Revision date: 01/01/2004

Supplier

Rohm and Haas Electronic Materials LLC
455 Forest Street
Marlborough, MA 01752 United States of America

For non-emergency information contact: 508-481-7950

Emergency telephone number

Chemtrec	800-424-9300
Rohm and Haas Emergency	215-592-3000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Potassium Carbonate	584-08-7	10.0 - <= 30.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Colour	colourless
Odour	Odorless

Hazard Summary — **CAUTION!**
Alkaline liquid and vapor. Causes skin, eye, and respiratory tract irritation. Onset of symptoms may be delayed.

Potential Health Effects

Primary Routes of Entry: Inhalation, ingestion, eye and skin contact.

Eyes: Will cause severe conjunctival irritation, corneal damage, and may result in loss of vision.

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Skin: Material will cause severe irritation and may cause chemical burns.

Ingestion: Swallowing may have the following effects:
severe irritation of mouth, throat and digestive tract

Inhalation: Inhalation may have the following effects:
severe irritation to nose, throat and respiratory tract and possibly lung damage

Target Organs: Eye
Respiratory System
Skin

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Immediate medical attention is required Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

Notes to physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point	Not Applicable--Decomposes
Suitable extinguishing media:	Not readily combustible. Select extinguishing agent appropriate to other materials involved.

Specific hazards during fire fighting: No specific measures necessary.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: This product may give rise to hazardous vapors in a fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear suitable protective clothing.

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Environmental precautions
Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up
Cover with absorbent or contain. Collect and dispose.

7. HANDLING AND STORAGE

Handling
Use only in well-ventilated areas. Avoid breathing vapor. Avoid contact with eyes, skin and clothing.
Keep container tightly closed.
Further information on storage conditions: No special precautions necessary.

Storage
Storage conditions: Store in original container. Storage area should be: cool dry well ventilated out of direct sunlight away from incompatible materials

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Eye protection: goggles

Hand protection: Neoprene gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work wear.

Respiratory protection: No personal respiratory protective equipment normally required. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Odour	Odorless
pH	9
Boiling point/range	100 °C (212 °F)
Flash point	Not Applicable--Decomposes
Vapour pressure	17.0 mmHg at 0 °C (32 °F)
Relative vapour density	not applicable
Water solubility	completely soluble
Relative density	1.25
Evaporation rate	1.0 n-Butyl acetate
VOC's	0 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under normal conditions.
Conditions to avoid	None known.
Materials to avoid	strong acids Oxidizers reducing agents
Hazardous decomposition products	None known.,
polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **Potassium Carbonate**
Acute oral toxicity LD50 rat 1,870 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.

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Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal
Dispose in accordance with all local, state (provincial), and federal regulations. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

IMO/IMDG

Not regulated (Not dangerous for transport)

15. REGULATORY INFORMATION

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate health hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D):
U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
This product does not contain any substances subject to Section 12(b) export notification.

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	2	0	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists

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ORIGINAL

BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Print Date: 04/17/2007

Layout 354195

ROHEM-0022

ORIGINAL

ELECTRONIC MATERIALS
ROHM HAAS

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

ADVANTAGE 2000™ Developer KB-1B

Revision date: 01/01/2004

Supplier

Rohm and Haas Electronic Materials LLC
455 Forest Street
Marlborough, MA 01752 United States of America

For non-emergency information contact: 508-481-7950

Emergency telephone number

Chemtrec	800-424-9300
Rohm and Haas Emergency	215-592-3000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
ethylene glycol n butyl ether	111-76-2	60.0 - <= 100.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Colour	Colorless to white
Odour	mild

Hazard Summary

WARNING!
Combustible liquid and vapor. Causes irritation to eyes, nose, and respiratory tract.
Prolonged, repeated contact, inhalation, ingestion, or absorption through the skin, may cause toxic effects to internal organ systems (liver, kidney, central nervous system).

Potential Health Effects

Primary Routes of Entry: Inhalation, ingestion, eye and skin contact, absorption.

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Eyes: May cause pain, transient irritation and superficial corneal effects.

Skin: Material may cause irritation.
Prolonged or repeated exposure may have the following effects:
drowsiness
defatting and drying of the skin which can lead to irritation and dermatitis
central nervous system depression
kidney damage
liver damage

Ingestion: Swallowing may have the following effects:
irritation of mouth, throat and digestive tract
headache
nausea
vomiting
Repeated doses may have the following effects:
central nervous system depression
liver damage
kidney damage

Inhalation: Inhalation may have the following effects:
irritation of nose, throat and respiratory tract
Higher concentrations may have the following effects:
systemic effects similar to those resulting from ingestion

Target Organs: Eye
Respiratory System
nervous system
Liver
Kidney
Skin

Carcinogenicity		
ethylene glycol n butyl ether	IRIS	Possible human carcinogen.
ethylene glycol n butyl ether	ACGIH	Confirmed animal carcinogen with unknown relevance to humans.

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting if person is conscious. Immediate medical attention is required Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

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Notes to physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point 68 °C (154 °F)

Suitable extinguishing media: Use water spray, foam, dry chemical or carbon dioxide.
Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting: This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Pressure may build up in closed containers with possible liberation of combustible vapors.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear suitable protective clothing.
Wear respiratory protection.
Eliminate all ignition sources.

Environmental precautions

Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up

Contain spills immediately with inert materials (e.g., sand, earth).
Transfer into suitable containers for recovery or disposal.
Finally flush area with plenty of water.

7. HANDLING AND STORAGE

Handling

Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed.
Further information on storage conditions: Keep away from heat, sparks, flame, and other sources of ignition. Practice good personal hygiene to prevent accidental exposure.

Storage

Storage conditions: Store in original container. Keep away from heat and sources of ignition.
Storage area should be: cool dry well ventilated out of direct sunlight

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
ethylene glycol n butyl ether	Rohm and Haas	TWA	10 ppm
	Rohm and Haas	STEL	30 ppm
	Rohm and Haas	Absorbed via skin	
	ACGIH	TWA	97 mg/m3 20 ppm
	ACGIH	SKIN_DES	
	OSHA_TRANS	PEL	240 mg/m3 50 ppm
	OSHA_TRANS	SKIN_DES	

Eye protection: goggles

Hand protection: Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work wear.

Respiratory protection: Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	liquid
Colour	Colorless to white
Odour	mild
pH	not applicable
Boiling point/range	171 °C (340 °F)
Flash point	68 °C (154 °F)
Vapour pressure	< 1.0 mmHg at 20 °C (68 °F)
Relative vapour density	4.1
Water solubility	completely soluble
Relative density	0.91
Evaporation rate	0.06 n-Butyl acetate
VOC's	885 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under normal conditions.
Conditions to avoid	High temperatures
Materials to avoid	Oxidizers
Hazardous decomposition products	Smoke, soot, and toxic/irritating fumes (i.e., carbon dioxide, carbon monoxide, etc.).,
polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **ethylene glycol n butyl ether**
Acute oral toxicity LD50 guinea pig 1,400 mg/kg
May affect the liver and kidneys and may increase red blood cell fragility.

Component: **ethylene glycol n butyl ether**
Acute oral toxicity LD50 rat 1,250 mg/kg

Component: **ethylene glycol n butyl ether**
Acute inhalation toxicity LC50 rat 4 h 2.175 mg/l

Component: **ethylene glycol n butyl ether**
Acute inhalation toxicity LC50 guinea pig 791 mg/m3

Component: **ethylene glycol n butyl ether**
Acute dermal toxicity LD50 guinea pig > 2,000 mg/kg

Component: **ethylene glycol n butyl ether**
Acute dermal toxicity LD50 rabbit 450 mg/kg

Component: **ethylene glycol n butyl ether**
Toxicity to reproduction
Developmental effects were seen in laboratory animals only at dose levels that were maternally toxic.

Component: **ethylene glycol n butyl ether**
Mutagenicity
No mutagenic activity was observed in bacterial cells.

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12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

ethylene glycol n butyl ether

Ecotoxicity effects	
Toxicity to fish	LC50 1,995 mg/l
Toxicity to aquatic invertebrates	EC50 Daphnia magna 24 h 1,698 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal
Dispose in accordance with all local, state (provincial), and federal regulations. Incineration is the recommended method of disposal for containers. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

IMO/IMDG

Not regulated (Not dangerous for transport)

15. REGULATORY INFORMATION

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Delayed (chronic) Health Hazard
Fire Hazard
Immediate (acute) Health Hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product contains a chemical which is listed in Section 313 at or above de minimis concentrations.
SARA Title III Components: Glycol Ethers

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U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D):
U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
This product does not contain any substances subject to Section 12(b) export notification.

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)
This product contains a component or components known to the state of California to cause cancer and/or reproductive harm.
Components: Ethylene oxide 75-21-8

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	2	2	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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